REMARKS/ARGUMENTS

Favorable reconsideration of this application is respectfully requested.

The specification is amended by the present response to correct minor informalities. The changes made to the specification are deemed to be self-evident from the original disclosure, and thus are not deemed to raise any issues of new matter.

Claims 1-31 are pending in this application. Claims 1-31 were rejected under 35 U.S.C. §103(a) as unpatentable over U.S. patent 6,746,942 to Sato et al. (herein "Sato") or U.S. patent 6,734,635 to Kunii et al. (herein "Kunii").

Initially, applicants and applicants' representative thank Examiner Rosasco for the interview granted applicants' representative on September 19, 2005. During the interview the outstanding rejections were discussed in detail. Further, during the interview applicants' representative pointed out differences between the present invention and the applied art to Sato and Kunii. Amendments to clarify claim features were also discussed during the interview. The present response sets forth the discussed claim amendments. Examiner Rosasco indicated during the interview that in view of the amended claims and comments repeated below the claims appear to distinguish over Sato and Kunii.

Addressing now the rejection to claims 1-31 under 35 U.S.C. §103(a) as unpatentable over Sato or Kunii, that rejection is traversed by the present response.

The claims are amended by the present response to clarify a feature recited therein. Specifically, the claims now make more explicit that "the phase shift mask receiv[es] the light intensity distribution from the optical member".

To briefly explain features in the present invention, attention is directed to Figures 1-3B in the present specification as a non-limiting example. The present invention is directed to a crystallization apparatus and method that can illuminate a phase shift mask 4 to irradiate a polycrystalline semiconductor film 6 or an amorphous semiconductor film 6 with a light

beam that has a light intensity distribution of an inverse peak pattern that has a minimum light intensity in an area corresponding to a phase shift portion of the phase shift mask 4 to produce a crystallized semiconductor film.

The applicants of the claimed invention recognized, and with reference to Figure 6 of the present specification, that if in such a crystallization apparatus or method only a standard phase shift mask 4 was utilized, the light intensity of the intermediate portion between the peak portions has a portion in which the intensity is lower than the surrounding parts (usually there are a plurality of such portions although Figure 6 only shows one such portion). As a result, during the process of growing laterally from the peak part, the crystal growth will stop when advancing from the portion having a high intensity to the portion having the low intensity. That is, the growth of the crystal may stop at the concave portion. As a result a large crystal grain cannot be obtained.

The claimed invention overcomes such drawbacks by utilizing a specific optical member through which light passes before impinging on the phase shift mask. With reference to Figure 1 of the present specification as a non-limiting example, a specific optical member 1 is provided, characteristics of that optical member being shown in Figures 3A, 3B in the present specification. The optical member 1 as shown in Figures 3A-3B in the present specification has a specific structure such that the light intensity distribution output therefrom has a ***concave pattern*** with the light intensity at a minimum in an area corresponding to the phase shift portion, and which increases towards the circumference of that area to a maximum based on light from the illumination system. That is, the light output from the optical member 1 is output to have a concave portion such as shown in Figure 3B.

Combining such an optical member 1 with a phase shift mask 4 provides enhanced results such as shown for example in Figure 7A in the present specification. As shown in Figure 7A, by utilizing a specific optical member with a concave output light intensity

distribution, light having a light intensity distribution as shown in Figure 6 is superposed on light having a light intensity distribution as shown in Figure 3B, resulting in the light intensity output of Figure 7A. With such light intensity output as in Figure 7A from the phase shift mask, the claimed invention allows crystal grains to be long in a lateral direction on a semiconductor film.

Other embodiments in the present invention show other structures of specific optical members that can also be utilized to achieve the same results.

The claimed features of the specific optical member utilized in conjunction with the phase shift mask is believed to be neither taught nor suggested by either of the applied art to Sato or Kunii.

First, the basis for the outstanding rejection does not appear to point to any specific optical member in Sato or Kunii that has an output ***light intensity distribution with a concave pattern***, and which in turn is received by a phase shift mask. Thus, the claims appear to distinguish over Sato and Kunii.

One basis for the outstanding rejection does cite Sato teaching "a radius of curvature of each of projections on the surface of the crystallized semiconductor film is larger than a radius of curvature of each of projections on the surface of the polycrystalline thin film...".[1]

In that respect, applicants point out such a disclosure in Sato is noted at column 11, lines 62-65 therein. That portion in Sato is directed to a radius of curvature of a micro-projection 36 relative to that of a micro-projection 35. Such teachings in Sato are not directed to an optical member having the specific claim structure of having an output light intensity distribution of a "concave pattern", and particularly such that a phase shift mask receives the light intensity distribution from the optical member.

Moreover, no teachings in Kunii are directed to such subject matter.

[1] See the Office Action of July 26, 2005, the sentence bridging pages 4 and 5.

In such ways, applicants respectfully submit the claims as currently written distinguish over both Sato and Kunii.

As no other issues are pending in this application, it is respectfully submitted the present application is now in condition for allowance, and it is hereby respectfully requested that this case be passed to issue.

Respectfully submitted,

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